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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/914,650 | 02/27/2002 | Eric Yijing Zhang | Q66048 | 9665 |

7590 09/04/2003

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| EXAMINER |
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ALVO, MARC S

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| ART UNIT | PAPER NUMBER |
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1731

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|--------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/914,650 | ZHANG ET AL. | |
| | Examiner | Art Unit | |
| | Steve Alvo | 1731 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6-10-2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term "through at least one refiner, each refiner followed by steam separation and being in series", includes any number of refiners, only two refiners followed by steam separation and being in series was disclosed, see Figure 1, refiners 6 and 10 and specification, page 4, lines 24-32. The term "at least one" is broader than the disclosed one or two refiners.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over LOWRIE et al in view of MADISON et al and GRIMSLEY et al and WEST.

LOWRIE et al teaches (Figure 5) preheating and/or pre-steaming lignocellulosic chips (column 1, lines 1-18) passed to a refiner (412) and steam separator (418) and subsequent to steam separation, is passed to a storage vessel (latency chest (446)) and to a screening department (454) wherein the peroxide bleaching agent is added between the refiner and the

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screening department (425). MADISON et al teaches the bleaching of mechanical pulp in a process similar to LOWRIE et al, wherein the bleaching agent is added between the refiner (secondary refiner) and the screen, and teaches the alternativeness of using peroxide or hydrosulfites, see column 2, lines 24-26. It would have been obvious to use the reductive bleaching agent, e.g. hydrosulfite, for the bleaching agent of LOWRIE et al as the alternativeness of bleaching mechanical pulp is taught by MADISON et al. GRIMSLEY et al teaches when bleaching with hydrosulfites that the access to oxygen should be minimized. It would have been obvious to the artisan when substituting the hydrosulfite of MADISON et al for the peroxide of LOWRIE et al to minimize the access of oxygen as taught by GRIMSLEY et al. It would have been obvious to bleach the pulp under drastic conditions as such is taught by WEST, see WEST for adding a chelating agent just prior to the reducing agent. The use of a chelating agent with hydrosulfite bleaching agent would have been obvious from the teachings of WEST to stabilize the hydrosulfite, WEST, column 6, lines 25-28. When more than one refiner is used it would have been obvious to use a steam separator after each refiner as WEST teaches venting each of the sump tanks (20 and 28) to the atmosphere to remove the water vapor and air from the pulp (column 3, lines 35-53) to prevent the oxygen from destroying the effectiveness of the reductive bleaching agent (lines 50-53).

The argument that LOWRIE the instant process uses more than one refiner in series, e.g. in direct contact with each other is not convincing as claim 1 calls for "at least one refiner". This would not be the argued "more than one refiner in series. Besides refiners (412) and (442) of LOWRIE are in series as the pulp flows through one and then the other. The claims are open and include other steps between the refiners and separators.

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The argument that the instant process does not use a bleaching tower is not convincing, as the claims are open and do not exclude a bleach tower. Applicant has argued that LOWRIE adds the bleaching agent between refiners. However, MADISON et al teaches the bleaching of mechanical pulp in a process similar to LOWRIE et al, wherein the bleaching agent is added between the refiner (secondary refiner) and the screen. It would have been obvious to add the bleaching agent of LOWRIE between the refiner and the screen as taught by MADISON et al. The argument that LOWRIE does not use the very high temperature and short times used by Applicant is not convincing as temperatures and times are not claimed. Claim 11 is not clear as to the temperature is used. Although 80 to 90 degrees Centigrade is claimed, this is not a positive recitation as it is only preferred. The term "drastic" conditions" is vague and does not define over the temperatures and times of LOWRIE. Besides the use of short times and high temperatures is taught by WEST, column 6, lines 66-72. Claim 11 should be clarified by removing the term "preferably". Also the bracketed term "(the latency chest)" and "= Na₂SO₄" (Claim 12) are superfluous and should be deleted.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

When filing an "**Official**" FAX in Group 1730, please indicate in the Header (upper right) "**Official**" for papers that are to be entered into the file. The "**Official**" FAX phone numbers for this TC 1700 are:

Non-Final Fax: (703) 872-9310 **After-Final FAX:** (703) 872-9311.

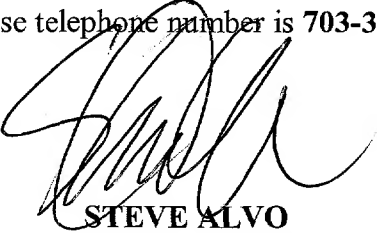
When filing an "**Unofficial**" FAX in Group 1730, please indicate in the Header (upper right) "**Unofficial**" for Draft Documents and other Communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers. The "**Unofficial**" FAX phone number for this Art Unit (1731) is (703) 305-7115.

Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is (703) 308-2048. The Examiner can normally be reached on Monday - Friday from 6:00 AM - 2:30 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Steve Griffin, can be reached on 703-308-1164.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Group receptionist** whose telephone number is 703-308-0661.

MSA
9/2/03


STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731